

**INTEGRATED ASSESSMENT OF ADAPTIVE POTENTIAL OF OMSK SPRING BARLEY VARIETIES
UNDER STEPPE CONDITIONS OF THE WESTERN SIBERIAN REGION**P. N. Nikolaev¹, O. A. Yusova¹, I. V. Safonova², N. I. Aniskov²¹ Omsk Agrarian Scientific Center

26, Koroleva pr., Omsk, 644012, Russia

E-mail: yusova@anc55.ru, nikolaev@anc55.ru;² N. I. Vavilov All-Russian Institute of Plant Genetic Resources

42, Bol'shaya Morskaya St., St. Petersburg, 190000, Russia

E-mail: i.safonova@vir.nw.ru

When developing long-term breeding programs, there is an urgent need to analyze the variability of the varieties behavior and climatic factors in a particular zone. The purpose of the research was to characterize the adaptive ability of spring barley varieties in the conditions of the steppe zone of Western Siberia. The paper presents the results of studies carried out from 2011 to 2018. The objects of research were 9 varieties of spring barley: Omskiy 95 (standard), Omskiy 90, Sibirskiy Avangard, Sasha, Omskiy 99, Podarok Sibiri, Omskiy 100 (chaffy varieties), Omskiy golozernyy 1 (standard) and Omskiy golozernyy 2 (naked varieties). In the conditions of the steppe zone of Western Siberia, the average yield for the period of research was 3.5 t ha⁻¹ for chaffy varieties, and 2.7 t ha⁻¹ for naked varieties. According to the results of the rank assessment, the most adaptive was the standard variety Omskiy 95 (sum of ranks = 34), which stood out according to the following indicators: the coefficient of uniformity – according to B. A. Dospekhov ($B = 64.4\%$), homeostatic – according to V. V. Hangildin ($Hom = 2.8\%$), stress resistance – according to A. A. Goncharenko ($Y_{min} - Y_{max} = -3.4$) and A. V. Bykov ($CST. = 0.57$), the coefficient of ecological plasticity – according to D. I. Baranskiy ($0 = 2.8$). Among the group of naked varieties, the standard variety Omskiy golozernyy 1 (the sum of ranks = 66) turned out to be adaptive in terms of such indicators as the index of ecological plasticity – according to A. A. Gryaznov ($IEP = 0.85$), stability index – according to V. V. Hangildin ($IS = 6.3$), homeostatic – according to V. V. Hangildin ($Hom = 2.0\%$), stress resistance – according to A. A. Goncharenko ($Y_{min} - Y_{max} = -3.1$), the compensatory ability of the variety – according to A. A. Goncharenko ($(Y_{min} + Y_{max})/2 = 2.85$).

Key words: spring barley, variety, productivity, adaptability, plasticity, stability, rank.